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# The Role of Learning Management Systems in Malaysian Universities: Advancing Quality Education and Reducing Inequalities

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## Abstract

The successful use of Learning Management Systems (LMS) in higher education institutions is critical to improving the quality of teaching and encouraging student engagement. The paper presents trends, tendencies, and challenges of LMS use among Malaysian public and private university teachers. Employing a quantitative method, the research carried out surveys of teaching staff from different disciplines. The findings show stark contrasts between private and public institutions regarding LMS infrastructure, instructor preparedness, and pedagogical integration. By resolving these differences, LMS can provide an equitable digital learning environment in Malaysia by increasing access to high-quality education (SDG 4) and decreasing gaps between public and private schools or between urban and rural students (SDG 10). Private universities show high adoption rates, whereas public universities are held back by infrastructural and bureaucratic problems. The study provides recommendations to bridge the gaps and advance the digital teaching environment in Malaysian higher education.

## Keywords

Learning Management Systems, Tertiary Education, Online Learning, Digital Learning, Quality Education

## Introduction

The incorporation of Learning Management Systems (LMS) in higher education has transformed conventional methods of teaching and changed the education domain worldwide. LMS platforms systematize the administration, documentation, tracking, reporting, and delivery of educational courses. As the trend of education becoming hybrid or completely online increases, LMS tools like

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Moodle, Blackboard, Google Classroom, and Canvas have become indispensable assets for universities(Bahar et al., 2020; Bradley, 2020). Besides simplifying the distribution of content and evaluation of students, these systems foster learning community collaboration and data-driven instructional decisions(Bahar et al., 2020; Furqon et al., 2023).

LMS has grown increasingly important in Malaysia, especially following the COVID-19 pandemic. The Ministry of Higher Education has spearheaded digital transformation as a national agenda, calling on institutions to invest in innovation, infrastructure, and training(Owidi et al., 2023; Prodanova et al., 2021). There are, however, rather significant disparities between public and private universities in the adoption and effect of LMS. Private universities will be better positioned to implement new technology because they have greater freedom and less restrictive governance mechanisms(Prodanova et al., 2021). Public universities will likely be bound by the constraints of bureaucratic red tape, tight budget allocations, and ingrained legacy systems that will slow rapid innovation(Prodanova et al., 2021).

LMS implementation success is determined by a range of factors such as faculty digital literacy, administrative support, access to technical training, and general institutional commitment to integrating technology into pedagogy(Bahar et al., 2020; Wickramasinghe & Suraweera, 2022). The public versus private sector difference in LMS implementation is critical concerning developing targeted interventions for the digital divide in higher education(Bahar et al., 2020; Wickramasinghe & Suraweera, 2022).

As seen in comparable contexts like Bangladesh's export-driven economy, economic issues like exchange rate volatility can worsen budgetary constraints for public universities in developing nations like Malaysia, restricting investments in LMS infrastructure and impeding equitable access to digital learning(Basak et al., 2025). The implementation of Learning Management Systems (LMS) in Malaysian universities offers considerable potential for the progression of Sustainable Development Goals (SDGs). LMS provide scalable, technology-enhanced platforms for course delivery, assessment, and student engagement and thus promote SDG 4 (Quality Education) by allowing inclusive and equitable higher education access including to under-serviced populations in rural areas and public universities with limited resources(Bahar et al., 2020; Ong, 2019). Additionally, LMS help address inequalities in education (SDG 10) by narrowing the gaps between public and private institutions and supporting that learning can be personalized for different groups of learners(Bahar et al., 2020; Kanokngamwitroj & Srisa-An, 2022). This study focuses on how LMS implementation in Malaysia relates to these SDGs and considers opportunities and challenges that can be addressed to facilitate sustainable development within education.

## Research Problem

Despite national initiatives in encouraging digital learning at the national level, there is a perceived mismatch between the adoption of LMS in Malaysian private and public universities. While

previous studies have emphasized the contribution of technology to improved education, less is known about institutional-level issues and faculty experiences in shaping LMS adoption(Bahar et al., 2020; Wickramasinghe & Suraweera, 2022). This research seeks to fill these gaps by investigating the status of LMS adoption in Malaysian higher education, paying particular attention to the contrasting environments of public and private contexts. The study thus investigates the level of adoption of LMS in teaching at Malaysian universities, determines the barriers to its effective use, and analyzes how the barriers vary in public and private universities(Bahar et al., 2020; Wickramasinghe & Suraweera, 2022).

**Review of Literature**

Teaching approaches have been transformed by the increasing integration of Learning Management Systems (LMS) into higher education, particularly in the aftermath of the COVID-19 pandemic. LMS platforms like Moodle, Blackboard, and Google Classroom were crucial resources for maintaining academic instruction remotely as actual classrooms became unreachable. These systems, which offer features such as material distribution, real-time feedback, automated grading, and student performance tracking, have established themselves as the cornerstone of digital learning in Malaysia(Bahar et al., 2020; Furqon et al., 2023). The pressing need for digital transformation in higher education is the reason for the rise in LMS use. However, public and private institutions differ greatly in terms of implementation and utilization, frequently because of variations in administrative flexibility, resource availability, and digital readiness.

Due to more institutional autonomy, superior funding, and quicker decision-making, private colleges generally exhibit higher adoption rates and more seamless LMS integration(Prodanova et al., 2021). Public universities, on the other hand, deal with greater structural issues, including restricted ICT infrastructure, bureaucratic processes, and tight resources, which can make it more difficult to implement and utilize LMS platforms effectively(Prodanova et al., 2021). The significance of institutional readiness and investment in digital learning environments is highlighted by these discrepancies.

Furthermore, new research highlights that institutional support, specifically consistent faculty training, prompt technical assistance, and unambiguous policy guidelines, is essential to the success of LMS adoption. Mustapha et al. (2023) discovered a high correlation between the amount of help and training lecturers receive and their degree of engagement and satisfaction with the LMS. Even the most powerful LMS platforms run the danger of being underutilized or abused in the absence of proper training and continuing support. Learning outcomes will increase if instructors feel comfortable utilizing LMS technologies and are able to incorporate them into their lessons.

User opinions regarding the efficacy of LMSs are also quite important. According to Ohliati & Abbas (2019), the frequency and depth of the use of LMS features in instructional delivery are greatly influenced by instructors' perceptions of the system's value. Therefore, improving LMS

performance in Malaysian higher education institutions requires regular support and cultivating good user attitudes.

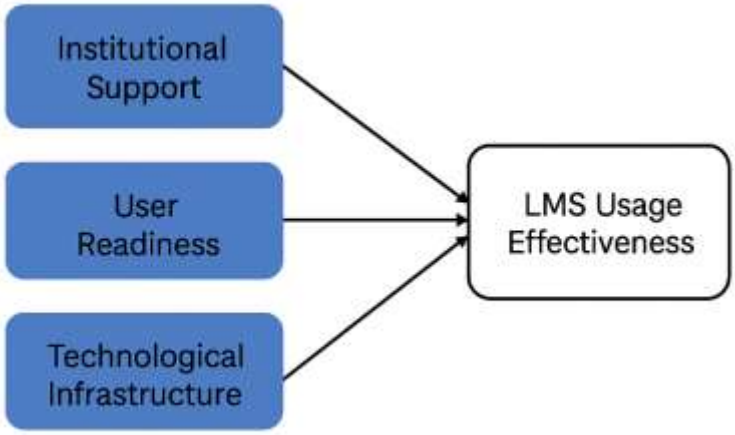



***Figure 1: Conceptual framework of LMS usage effectiveness***

**Development of Hypotheses**

The following theories, which are based on the literature, direct this investigation:

- H1: Compared to faculty at public institutions, professors at private universities report using LMS more frequently.
- H2: Private universities are more likely to offer institutional support and training for LMS adoption.
- H3: Faculty perceptions of their teaching efficacy are positively correlated with increased LMS usage.

## Methodology

This study investigated the use of Learning Management Systems (LMS) by faculty members from Malaysian public and private universities using a simple survey-based methodology. The goal was to find out what sort of help lecturers receive and how LMS is being used in the classroom.

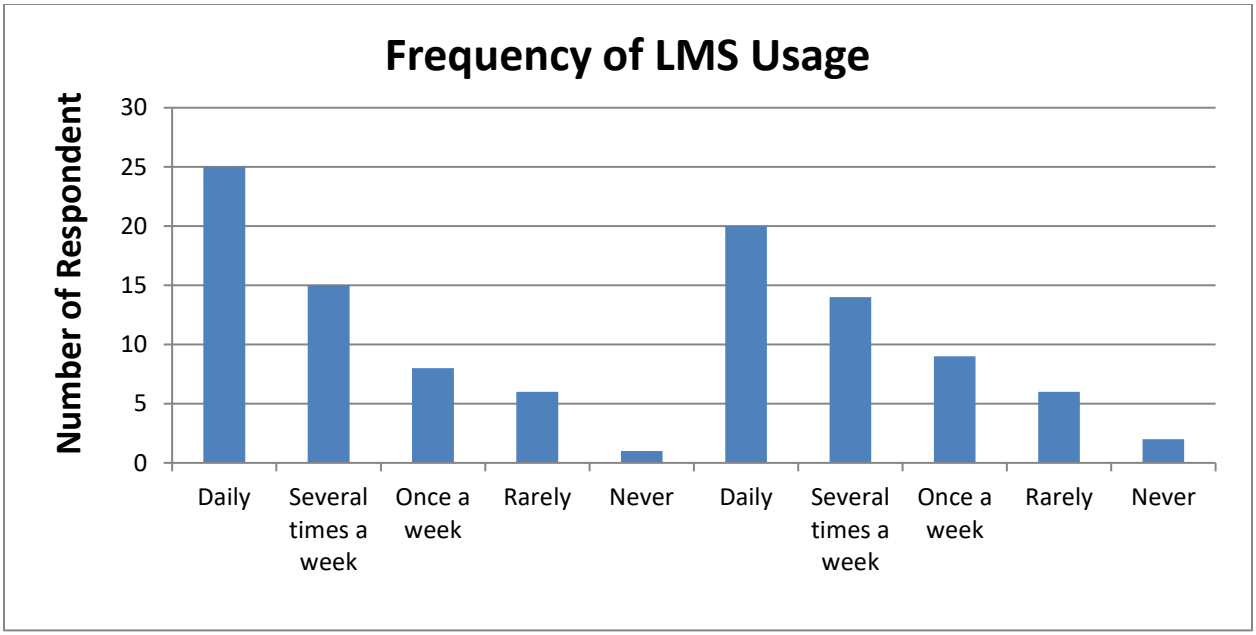
A survey was created to collect opinions on several subjects, such as how often LMS is used, how easy it is for users to use, how accessible training is, and how it affects instruction. Each topic was rated on a five-point scale, with 1 denoting "strongly disagree" and 5 denoting "strongly agree." This made it easier to measure the lecturers' perceptions of the system. Academic personnel at six universities, three public and three private, were given the survey, and 106 responses were obtained. Participants had varying degrees of teaching experience and came from a variety of academic fields.

The answers were examined using simple descriptive techniques, mostly averages and comparisons with public versus private institutions. Besides the survey, there were informal interviews and group discussions with several of the respondents to gain a deeper understanding of their experiences. This was utilized to confirm and reinforce the results of the survey. The research was conducted ethically. The participation was voluntary, no personal data was gathered, and the respondents were assured that their information would be kept confidential***. See Table 1, Table 2, and Table 3.***

***Table 1: Shows the Frequency of usage of LMS in both Private and Public Universities in Malaysia.***

| Institution Type | Frequency of LMS Usage | Number of Respondents |
|---|---|---|
| Public | Daily | 25 |
| Public | Several times a week | 15 |
| Public | Once a week | 8 |
| Public | Rarely | 6 |
| Public | Never | 1 |
| Private | Daily | 20 |
| Private | Several times a week | 14 |
| Private | Once a week | 9 |
| Private | Rarely | 6 |
| Private | Never | 2 |
| **Total** | | **106** |

***Table 2 Bar graph showing the frequency of LMS usage in Malaysia***




According to the study, most Malaysian university instructors use LMS on a regular basis, with more than 70% indicating daily or weekly use. ***From Table 1***, in public colleges, 45% of respondents utilize LMS regularly, whereas private institutions have a slightly lower figure of 39%. Only a few respondents in both sectors said they used LMS rarely or never. This shows excellent overall adoption, albeit significant gaps in engagement remain. Continued training and support could contribute to more consistent usage across all institutions.

***Table 3: Table showing the Effectiveness of Usage of LMS***

| **Effectiveness** | **Number of Respondents** |
|---|---|
| Very Effective | 35 |
| Effective | 40 |
| Neutral | 15 |
| Ineffective | 10 |
| Very Ineffective | 6 |
| **Total** | **106** |

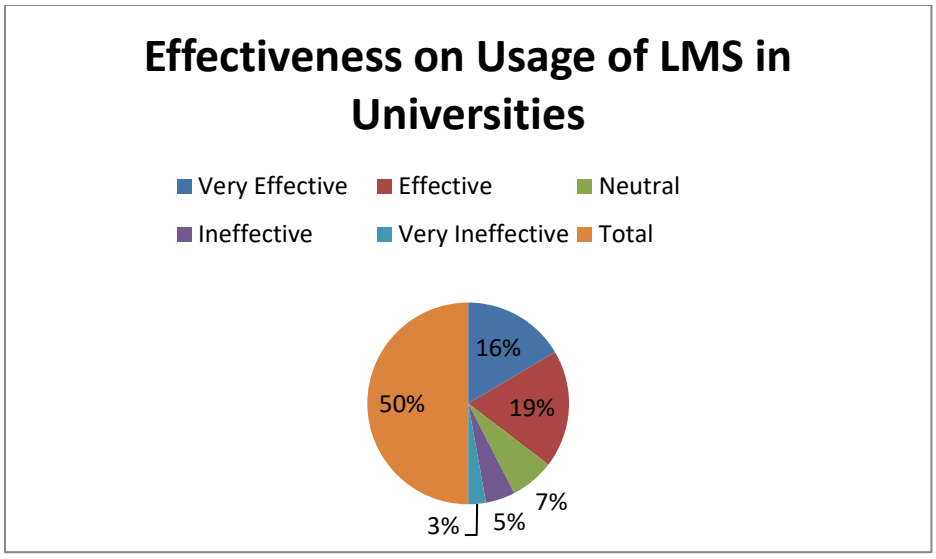



***Figure 4: Pie Chart showing the effectiveness of the usage of LMS in Universities***

From ***Table 2,*** out of 106 respondents, the majority have a good attitude toward Learning Management Systems (LMS). Approximately 71% of respondents viewed LMS as either effective or very effective in improving learning and academic management. 14% were neutral, implying moderate utility, with only 15% finding LMS ineffective to some extent. Overall, the findings indicate that LMS is widely accepted as a good educational tool in Malaysian universities, with low levels of discontent.

***Table 4: Showing the Impact of LMS usage on Instruction in Universities***

| **Instructional Impact** | **Number of Respondents** |
|---|---|
| Highly Positive Impact | 30 |
| Positive Impact | 42 |
| Neutral | 18 |
| Negative Impact | 10 |
| Highly Negative Impact | 6 |
| **Total** | **106** |

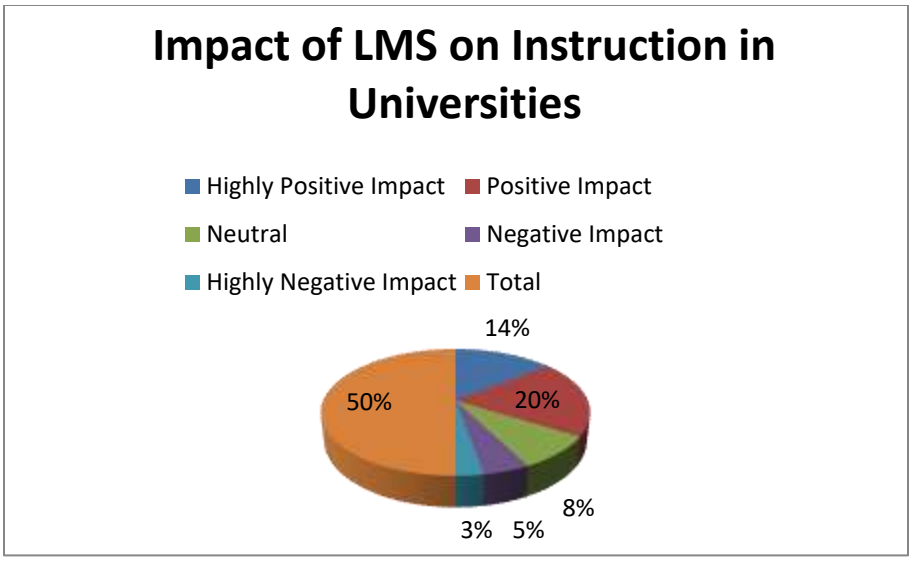



***Figure 5: Pie chart showing the impact of LMS on instruction in universities***

From ***Table 3***, the majority of the 106 respondents (67.9%) believe that the implementation of Learning Management Systems (LMS) in Malaysian universities improves instructional outcomes. Specifically, 28.3% assessed the influence as extremely favorable, while 39.6% rated it as positive. A moderate 17% remained neutral, with only 15.1% reporting unfavorable experiences. These data indicate that LMS systems are usually effective in improving instructional delivery, albeit some diversity in impact persists, presumably due to implementation or user characteristics.

## Outcome of the Study

Several useful insights regarding the use of LMS at Malaysian universities were uncovered by the study. First off, most faculty members from both public and private universities concurred that learning management systems (LMS) are helpful for connecting with students and organizing course materials(Bahar et al., 2020; Ohliati & Abbas, 2019). Nonetheless, some disparities in the quality of support were noted; instructors at private colleges claimed to receive more regular technical help and training(Prodanova et al., 2021; Wickramasinghe & Suraweera, 2022).

The findings demonstrated that while infrequent users frequently felt uncertain about the system's features(Maslov et al., 2021; Mustapha et al., 2023), frequent LMS users found it simpler to incorporate the system into their instruction. According to the research, instructors were more likely to successfully use LMS technologies when their schools offered them the right kind of assistance and training(Prodanova et al., 2021; Wickramasinghe & Suraweera, 2022).

Informal conversations with numerous lecturers reaffirmed that they like LMS features such as assignment submission, attendance tracking, and messaging(Furqon et al., 2023; Ohliati & Abbas, 2019). Nevertheless, some were worried about system downtime or a deficiency of technical skills, specifically in public universities where IT support is limited(Bahar et al., 2020; Mohammadi et al., 2021). Generally, the research stressed that effective implementation of LMS relies not just on the presence of the system but also on institutional support, training, and personal motivation of lecturers(Balkaya & Akkucuk, 2021; Lwande et al., 2021; Mustapha et al., 2023).

## Discussion

### *LMS in Academic Settings*

Learning management systems are currently a major component of higher education's administration and delivery of instructional materials. To facilitate mixed and fully online learning, popular platforms such as Canvas, Blackboard, and Moodle are utilized. Asynchronous learning activities, live virtual sessions, interactive forums, automated tests, and analytics for performance monitoring are all supported by these platforms(Bradley, 2020; Furqon et al., 2023; Kanokngamwitroj & Srisa-An, 2022). Because they provide flexible access to course materials and facilitate remote instruction, learning management systems (LMS) are very helpful in maintaining educational continuity during emergencies like the COVID-19 pandemic(Bahar et al., 2020; Chotijah et al., 2022; Haththotuwa & Rupasinghe, 2021).

With both public and private universities implementing these systems to varying degrees, LMS usage has steadily increased in Malaysia(Bahar et al., 2020; Ong, 2019). Private schools frequently use feature-rich commercial platforms, although public universities use open-source programs like Moodle more frequently(Başaran & Mohammed, 2020). A key factor in determining the extent and impact of LMS deployment is the institution's level of digital preparedness(Owidi et al., 2023; Wickramasinghe & Suraweera, 2022).

***Public vs Private University Environment:*** The organizational dynamics of private and public universities in Malaysia present different pictures of LMS adoption realities. Private universities are generally more financially autonomous and enjoy greater decision-making freedom. Therefore, they are more able to invest in cutting-edge technological tools, offer ongoing faculty training, and quickly transform to adhere to educational trends(Prodanova et al., 2021; Rajakaruna et al., 2023). Public universities are meanwhile constrained by central governance structures, budgetary constraints, and slower policy enactment processes(Mohammadi et al., 2021; Owidi et al., 2023; Prodanova et al., 2021). This divergence impacts not just the selection of LMS but also the strategic direction of its application. Whereas private universities view LMS more as a promise of pedagogical innovation, public universities might view it more as an administrative tool, thereby constraining its applicability in pedagogy(Kant et al., 2021; Prodanova et al., 2021).

***Training and Involvement of Faculty:*** An important factor in determining the efficacy of an LMS is faculty engagement. Even the most powerful learning management system platforms are underutilized, according to research, if teachers lack the competence or confidence to use them successfully(Khiat & Vogel, 2022; Kwon et al., 2021; Mustapha et al., 2023). For faculty members to effectively incorporate LMS elements into their teaching practices, they need both pedagogical support and technical training. Private institutions frequently require and support frequent training sessions and offer rewards for integrating LMSs, which increases faculty support(Prodanova et al., 2021; Wickramasinghe & Suraweera, 2022). On the other hand, public universities sometimes lack formalized training frameworks, which leads to uneven use among faculties and departments(Bahar et al., 2020; Lwande et al., 2021; Mohammadi et al., 2021).

***Student-Centered Teaching Outcomes:*** LMS not only enhances the performance of the faculty but also affects the outcomes of the students. These systems encourage active learning through interactive tools, individual feedback, and discussion spaces. Research indicated that students gain through regular use of LMS in the form of greater accessibility, improved communication, and better-organized learning experiences(Furqon et al., 2023; Ohliati & Abbas, 2019; Triswidrananta et al., 2022). Yet, such effects are strongly contingent upon how LMS tools are implemented in course design. As a means of content presentation only, LMS can be ineffective at engaging students and fostering higher-order learning. Faculty pedagogical practices thus moderate the success of LMS-based learning(Khiat & Vogel, 2022; Raharjo et al., 2021).

Learning management systems (LMS) can improve educational quality provide flexible learning spaces and are student-centered. This supports SDG 4 (Quality education). Malaysian universities LMS, teachers and institutions alike, use platforms like Moodle and Blackboard to enhance educational quality by giving students access to resources, assessments, engaging with interactive assessments, and allowing collaboration virtually(Bahar et al., 2020; Mustapha et al., 2023). LMS also enhance educational quality and learning outcomes for students in public and private universities. In addition to SDG 4, LMS systems reduce inequalities in education for the rural and low economic status learners, aligning to SDG 10 (Reduced Inequality) by allowing for increased digital access to education and equity for rural students regarding digital learning, in comparison to urban private universities and public institutions with less resources(Bahar et al., 2020; Kanokngamwitroj & Srisa-An, 2022). To garner these SDG benefits, barriers including the gaps in implementing digital infrastructure and different digital literacy levels in Malaysia need to be addressed.

### *Differences Between Public and Private Institutions' Use of LMS*

The study's empirical findings show a notable difference in LMS usage across Malaysia's public and private universities. Private school faculty members routinely report higher utilization rates, better levels of satisfaction with institutional support, and more positive opinions about the influence of learning management systems on the efficacy of instruction(Prodanova et al., 2021;

Rajakaruna et al., 2023). The structural and operational distinctions between the two sectors are reflected in these differences, which are not merely incidental.

Private universities are institutionally more responsive and flexible, facilitating faster technological adoption and more embedded pedagogy(Kant et al., 2021; Prodanova et al., 2021). Decentralized organizational structures and financial autonomy in decision-making provide the latitude to invest in state-of-the-art platforms, develop faculty capacity, and respond quickly to pedagogical advances(Rajakaruna et al., 2023; Wickramasinghe & Suraweera, 2022). It creates an active digital culture where LMS are not only seen as administrative solutions but also as catalysts for pedagogical change(Belousova et al., 2021).

Conversely, public universities, while larger in size and student body, are faced with bureaucratic hindrances in LMS procurement, implementation, and support that retard the process(Başaran & Mohammed, 2020; Mohammadi et al., 2021; Owidi et al., 2023). Budget constraints, hierarchical decision-making, and legacy infrastructure limit their ability to innovate or scale up LMS utilization at all meaningfully. Public institution faculty utilize LMS more out of need rather than strategic intention, and because of this, there is underutilization of its complete potential(Bahar et al., 2020; Lwande et al., 2021).

***The Crucial Function of Institutional Assistance***

One of the best indicators of successful LMS integration was institutional support. In addition to intangible elements like leadership commitment, institutional vision, and change management, this also includes material assistance like money for servers, licenses, and IT infrastructure(Mustapha et al., 2023; Nisio et al., 2018; Wickramasinghe & Suraweera, 2022). Regression analysis demonstrates that perceived teaching efficacy and the frequency of LMS use are positively connected with institutional support(Khiat & Vogel, 2022; Mustapha et al., 2023). This is supported by qualitative data, as participants from private colleges spoke of a helpful environment that consists of peer mentoring, instructional designers, LMS helpdesks, and ongoing professional development. Faculty members are less burdened cognitively and technically by these support systems, which increases their willingness and ability to incorporate LMS elements into their instruction(Kanokngamwitroj & Srisa-An, 2022; Prodanova et al., 2021).

On the other hand, respondents from public universities stated that training, when it was offered, was frequently haphazard, out-of-date, or more concerned with system navigation than pedagogical application(Başaran & Mohammed, 2020; Lwande et al., 2021). Faculty's incentive to continue using LMSs is further reduced by the absence of institutional follow-through following training. Many said they felt alone in their efforts to teach digitally and that they needed specialized LMS support teams, incentives for creativity, and acknowledgment of their efforts in tenure and promotion choices.

This study reinforces the need for multifaceted institutional support that is integrated into the university's overarching strategic plan. Adoption of LMS should be in line with performance

metrics, instructional objectives, and institutional quality assurance procedures. Even the greatest LMS platforms run the risk of becoming underutilized repositories rather than dynamic learning environments in the absence of such alignment.

***Implications for Policy and Practice***

**a.** ***National Digital Learning Standards:*** The results call upon the Malaysian Ministry of Higher Education (MOHE) to establish national LMS quality standards and guidelines of implementation to which all higher learning institutions must conform. They should extend beyond the provision of the hardware to encompass standards for the facilitation of the staff personnel, the frequency of training, and the integration of LMS features into curriculum planning(Jindal, 2021; Ohliati & Abbas, 2019).

***b. Specific Appropriations for Public Universities****:* Policymakers must take note that digital disparities will be worsened if public universities are not provided with financial and institutional resources to match private universities. This requires targeted funding allocations exclusively for ICT infrastructure, software licenses, and personnel training. Public universities need to be allocated discretionary funds to update their LMS ecosystems(Mohammadi et al., 2021; Owidi et al., 2023; Prodanova et al., 2021).

***c. The Policy of Professional Development***: Human factors play a major role in the effectiveness of institutional LMSs. Consequently, faculty development shouldn't be left up to institutional judgment or chance. MOHE should think about requiring professors to complete e-pedagogy certification courses that are linked to academic advancement. These initiatives ought to continue and be backed by regional hubs for excellence in online learning(Kant et al., 2021; Mustapha et al., 2023; Olesen et al., 2022).

***d. Promoting Research and Innovation***: Universities should establish incentive programs that recognize and reward faculty members who utilize learning management systems (LMS) in innovative ways, particularly those who employ digital tools to advance the scholarship of teaching and learning (SoTL). To promote a culture of excellence, it is possible to institutionalize grants for pedagogical innovation connected to LMSs, awards for digital teaching, and sabbaticals for LMS content development(Barcellos & Botura, 2018; Khiat & Vogel, 2022; Raharjo et al., 2021).

***e. Monitoring and Evaluation:*** Institutions must establish regular monitoring and evaluation systems for LMS utilization, focusing on both qualitative and quantitative outcomes, including faculty feedback, learning outcomes, and student satisfaction, as well as quantitative metrics such as login frequency, course uploads, and student participation. At the institutional and national levels, these assessments ought to influence policies and initiatives for ongoing improvement(Santiago et al., 2020; Xin & Singh, 2021).

***f. Collaboration and Best Practices Sharing:*** Lastly, encouraging cooperation between public and commercial organizations can minimize effort duplication and produce shared knowledge bases.

LMS consortia, workshops, and collaborative digital learning forums can be facilitated by MOHE or national education agencies, allowing institutions to share best practices, collaborate on resource development, and assess their progress(Jindal, 2021; Rajakaruna et al., 2023; Wickramasinghe & Suraweera, 2022).

### 5.5 Recommendations to improve LMS implementation

The table below outlines the primary difficulties discovered during the study and offers practical solutions to overcome each one. These guidelines are intended to help university administrators, IT coordinators, and instructors improve the uptake and efficacy of Learning Management Systems (LMS).

| Challenge | Suggested Action |
|---|---|
| Low LMS usage confidence | Provide more structured training |
| Inconsistent support | Assign dedicated LMS coordinators |
| System downtime | Upgrade server capacity |

## Conclusion

This research provides a comprehensive examination of Learning Management System (LMS) adoption in Malaysian private and public universities with an emphasis on variations in usage patterns, institutional support, and perceived pedagogical effects. The results confirm that private universities are more inclined to exhibit greater levels of LMS adoption, buttressed by more responsive governance, regular training programs, and investment in digital infrastructure as a strategic choice(Prodanova et al., 2021; Rajakaruna et al., 2023; Wickramasinghe & Suraweera, 2022).

Public universities, on the other hand, continue to be plagued by system difficulties caused by bureaucratic red tape, disjointed faculty development schemes, and budget constraints(Başaran & Mohammed, 2020; Mohammadi et al., 2021; Owidi et al., 2023). These differences demonstrate how LMS can help achieve SDG 10 (Reduced Inequalities) by ensuring equitable access to cutting-edge educational technology by bridging the digital divide between public universities with little resources and well-funded private schools(Owidi et al., 2023). Institutional, structural, and cultural support was the most important determinant of LMS effectiveness. Teachers are more likely to adopt and utilize LMS systems if they are provided with coherent training, pedagogical support, and appreciation by their institutions(Balkaya & Akkucuk, 2021; Khiat & Vogel, 2022; Mustapha et al., 2023). Furthermore, the fact that there is a positive correlation between the use of LMS and the effectiveness of teaching shows that digital tools need to be integrated into instructional design instead of being used for administrative ease(Furqon et al., 2023; Ohliati & Abbas, 2019; Raharjo et al., 2021).

The study has consequences for institutional practice and national policy. Prioritizing digital equity requires policymakers to provide public universities with standardized LMS implementation

guidelines and targeted investments(Jindal, 2021; Owidi et al., 2023). By enabling equitable access to digital learning tools throughout Malaysia's higher education landscape, robust fiscal policies that address economic instability can further support these investments and advance SDGs 4 (Quality Education) and 10 (Reduced Inequalities) (Basak et al., 2025). In turn, educational institutions ought to develop a positive environment that encourages faculty collaboration, innovation, and ongoing learning(Kanokngamwitroj & Srisa-An, 2022; Nisio et al., 2018). To better understand the regional dynamics of adoption of LMS, future research could build on these findings using comparisons across ASEAN nations, student-centered views, and longitudinal analysis(Chotijah et al., 2022; Rajakaruna et al., 2023; Triswidrananta et al., 2022).

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